AMENDMENTS OF THE CLAIMS

Claims 1-8 (cancelled)

5   9. (New)   A method for transmitting frames in a mobile communication system which transmits frames for several services, the method comprising the steps of:

creating a multiplex frame of a given length including at least one RLP frame determined according to a service priority; and

assembling a plurality of the consecutive multiplex frames into an information frame of a
10   predetermined length and transmitting the information frame.

         10. (New)   A data transmission device in a mobile communication system comprising:

a plurality of RLP processors each for processing unique service data and generating an
15   RLP frame of a predetermined length;

a multiplexing controller for determining a length of the RLP frame generated from the RLP processors, and assembling a multiplex frame; and

a physical layer processor for assembling a plurality of consecutive multiplex frames into an information frame of a second length and transmitting the information frame.

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         11. (New)   A method for receiving frames in a mobile communication system which receives an information frame comprised of a plurality of consecutive multiplex frames, each multiplex frame including at least one RLP frame having a header attached at the head thereof, the method comprising the steps of:

25   demultiplexing each multiplex frame included in the received information frame; and

separating at least one RLP frame included in the demultiplexed multiplex frame according to an RLP service using a length indicator of the header, and outputting the separated RLP frame to the corresponding RLP service for processing.

30   12. (New)   A device for receiving frames in a mobile communication system

which receives an information frame comprised of a plurality of consecutive multiplex frames, each multiplex frame including at least one RLP frame, at the head of which a header is attached, the device comprising:

a demultiplexing controller for separating at least one RLP frame included in each multiplex frame in the received information frame according to an RLP service using a length indicator of the header; and

a plurality of RLP processors for performing a corresponding service on the separated RLP frame.